

# Technical Information Management

## Program Mission

The mission of the Technical Information Management program (TIM) is to collect, preserve, and disseminate scientific and technical information, the primary and immediate product resulting from the \$7 billion annual Department of Energy research and development (R&D) program. This knowledge is recorded in two main sources: technical reports and scientific journals. The TIM program provides worldwide energy scientific and technical information to the Department of Energy (DOE), United States (U.S.) industry, academia, and the public through interagency and international scientific and technical information exchange agreements. The TIM program coordinates technical information-related activities at sites throughout the DOE complex, which includes developing and implementing information exchange policies and standards. The TIM program maintains a classified program which preserves and exchanges, in a secure environment, 100,000 classified, sensitive and limited circulation documents. Collectively, these activities provide accountability for the information resulting from DOE's R&D programs.

As part of the Office of Science, the TIM program serves the U.S. research community by collecting and disseminating R&D information increasingly in electronic, full-text form through the Internet. In the last three years, the TIM program, using digital technology, has developed a set of cutting-edge products for technical reports and scientific journals. The free, publicly-accessible Information Bridge ([www.osti.gov/bridge](http://www.osti.gov/bridge)) contains searchable, full-text access to 50,000 technical reports (over 4 million pages). PubSCIENCE ([www.osti.gov/pubsci](http://www.osti.gov/pubsci)), developed and implemented by the TIM program through negotiations with journal publishers, provides searchable bibliographic records with hypertext linkages to full-text journal articles at publishers' web sites. The TIM program also developed, updates, and maintains the DOE R&D Tracking System, the Department's centrally managed database that tracks and accounts for key information on each R&D project sponsored or performed by DOE and its public counterpart, the R&D Project Summaries Database ([www.osti.gov/rdprojects](http://www.osti.gov/rdprojects)). The DOE Information Bridge, PubSCIENCE, and the R&D Project Summaries Database are accessible independently or through the Virtual Library of Energy Science and Technology, Energy Files ([www.osti.gov/EnergyFiles](http://www.osti.gov/EnergyFiles)) which provides access to over 400 energy related information resources, searchable via 14 subject categories.

Other industrialized nations are also investing in energy R&D, and the resulting technical information is globally recognized as a valuable commodity that can be exchanged in order to save taxpayer dollars and avoid duplicative research. The TIM program represents DOE and the United States in international exchange agreements. TIM acquires foreign information through representation in the International Energy Agency's Energy Technology Data Exchange (ETDE) and the International Atomic Energy Agency's (IAEA) International Nuclear Information System (INIS). The ETDE agreement involves the exchange of energy related information among 18 industrialized nations. Under the INIS agreement, TIM acquires foreign non-defense nuclear related research information and fulfills the U.S. obligation to exchange its information as a member of the United Nations, to which IAEA reports. Requirements for technical information management and dissemination are delineated in the American Technology Preeminence Act; the Paperwork Reduction Act (and implementing guidelines); Department of Energy enabling legislation; and international treaties/agreements with the International Atomic Energy Agency.

## **Program Goal**

To provide accountability for and increase the productivity of energy R&D by making the resulting information more easily accessible and widely available than ever before at a lower cost per customer served.

Specific GOALS include:

- Enhance the Department's accountability for R&D expenditures and advance science knowledge and commercialization through the collection, organization, preservation, and dissemination of scientific and technical information resulting from the Department's R&D programs; and
- Provide energy-related scientific and technical energy information, collected worldwide, to the Department, U.S. industry, academia, and the public.

## **Program Objectives**

- Provide scientific and technical information (a greater number of researchers and citizens) at a reduced cost;
- Advance the development of an electronic, decentralized technical information collection that contributes to the establishment of a Virtual Library of Energy Science and Technology;
- Expand agreements for DOE's widespread, electronic access to U.S. science journals;
- Provide more effective mechanisms for public access to global energy-related information; and
- Provide secure exchange and preservation of 50 years of the Department's classified R&D information managed by the TIM program.

## **Performance Measures**

- Facilitate the identification, retrieval, and use of scientific and technical information for scientists and the public by applying information technology to build an easily searchable, fully electronic distributed virtual library environment encompassing multiple worldwide information collections.
- Expand and increase access to published and pre-printed scientific and technical information via cost-effective, specialized information retrieval systems resulting in a 25% increase in users served. This information includes PubSCIENCE, PrePrint Networks, and enhanced delivery of DOE scientific and technical report literature through an information infrastructure that uses tools such as Energy Links, the DOE Information Bridge, and the Energy Science and Technology Database.

In FY 1998, only a small fraction of the Department's final R&D reports were available electronically in full text, and no full text science journals were accessible to the DOE research community. In FY 2000, over 50,000 R&D reports are available through the DOE Information Bridge, and over 1,000 physical science journals are available through PubSCIENCE (analogous to PubMed in the Biomedical Sciences).

## Significant Accomplishments and Program Shifts

The Technical Information Management program continues to make progress toward strategic priorities, known collectively as “Bringing Science Information to the Desktop.”

### ■ DOE-Generated R&D Report Literature – DOE Information Bridge

As technology and common standards advance, it becomes more timely and economical to exchange information in electronic media. The Department’s scientific and technical information resources are rapidly being converted from a centralized paper-based system to a decentralized electronic format. The increasing percent of technical reports received electronically is evidence of this transition: 26 percent in FY 1999, 50 percent in FY 2000, and 71 percent in FY 2001. The DOE Information Bridge, ([www.osti.gov/bridge](http://www.osti.gov/bridge)) that provides access to 50,000 full-text, electronic DOE R&D reports, will continue to enable the user to bypass expensive and time-consuming bibliographic searches and requests for paper reports. The DOE Information Bridge has been recognized by the National Partnership for Reinventing Government with a Hammer Award by Yahoo!® as “Pick of the Week.” The public version of the Information Bridge is available through a partnership with the Government Printing Office (GPO) and is hailed as a “model” for other interagency collaborations by the Chairman of the Joint Committee on Printing. In FY 2001, the Information Bridge will be kept current with the latest in R&D results and is expected to have at least a 50 percent increase in its user base.

### ■ Electronic Science Journals – PubSCIENCE

Scientific research is a cumulative and synergistic process where continued advances are dependent on previous research findings. The pace of these advances is largely dependent on researchers’ and librarians’ ability to locate and retrieve information pertinent to their research areas. While scientific journal articles and technical reports always cite references, locating and retrieving the full text of these references has historically been an additional, time-consuming step in the information search and possible only on the premises of major science libraries. PubSCIENCE, developed and implemented by the TIM program through negotiations with journal publishers, provides searchable bibliographic records with hypertext linkages to full-text journal articles at publishers’ web sites. In FY 2001, PubSCIENCE will facilitate full-text electronic access to approximately 40 percent of the science journals to which the Department subscribes. In addition, under the PubSCIENCE purview, the TIM program, working in collaboration with DOE National Laboratories, continues to negotiate electronic subscription arrangements with journal publishers with the overall goal of delivering completely comprehensive full-text electronic science journals to the desktop. For no additional cost beyond that spent on paper subscriptions, the Department is receiving access to many additional science journals.

### ■ Virtual Library of Energy Science and Technology – Energy Files

The Virtual Library of Energy Science and Technology, EnergyFiles, ([www.osti.gov/EnergyFiles](http://www.osti.gov/EnergyFiles)), puts energy science and technology information at user’s fingertips. EnergyFiles provides both researchers and the general public with ever-expanding desktop access to scientific and technical information resources. With links to over 400 scientific resources, EnergyFiles provides information, tools, and technologies to facilitate the use of scientific resources and capabilities in planning and conducting energy-related research. EnergyFiles has conquered a major obstacle confronting multi-source libraries through the innovative application of emerging technologies. Users may now search full-text heterogeneous information sources with a distributed, single query search tool called Energy Portal.

## ■ **Archive of Science and Technology – Classified and Unclassified Information**

The TIM program's physical facility is the one place in the world where the Department's entire collection of scientific and technical information can be found. With the transition to the electronic information age, the repository function for the nation's energy-related science base must adapt to the new media. Interagency standards and agreements must be developed, adopted, and implemented while conserving resources and promoting information access and retrievability. The requested funding level allows for a limited conversion of the 1.5 million historical technical reports from paper to digital media. This conversion is especially timely due to the deterioration of the paper collection. The TIM program also houses a comprehensive repository of energy- and weapons-related classified program in a secure environment.

## ■ **Foreign R&D Results**

Funding at the requested level enables the Department to acquire approximately 20,000 foreign research records on behalf of the domestic science community through one of TIM's major foreign information exchanges, the International Atomic Energy Agency's International Nuclear Information System (INIS). Under this agreement, TIM acquires foreign non-defense nuclear-related research information and fulfills the U.S. obligation to exchange its information as a member of the United Nations, to which IAEA reports. TIM's other major foreign information exchange, the International Energy Agency's Energy Technology Data Exchange (ETDE) provides an additional 52,000 foreign research records for use by the domestic science community.

## ■ **DOE Research in Progress – DOE R&D Tracking System**

The DOE R&D Tracking System is the Department's centrally managed database that tracks key information on each R&D project sponsored or performed by DOE. The R&D Tracking System is the only Department-wide R&D reporting tool. The System is used for a variety of needs including responding to the annual Office of Science and Technology Policy (OSTP) data call; facilitating the Department's tracking of R&D projects; and reducing the time spent in responding to ad hoc data calls from within and outside the Department. The R&D Tracking System provides an on-line mechanism for Program Offices and the DOE Laboratories to review, manage, update, and analyze the Department's multi-billion dollar R&D program. The R&D Project Summaries Database, the web-based public version of the R&D Tracking System, provides open access to DOE R&D project summaries and supports the Department's interest in ensuring that scientific and technical information resulting from DOE's efforts is effectively managed and easily accessible to U.S. industry, educators, and the public. The TIM program assumes complete funding for this activity in FY 2001.

## Funding Profile

(dollars in thousands)

	FY 1999 Current Appropriation	FY 2000 Original Appropriation	FY 2000 Adjustments	FY 2000 Current Appropriation	FY 2001 Request
Technical Information Management					
Program Support .....	1,586	1,600	0	1,600	1,802
Program Direction.....	7,250	7,000	0	7,000	7,500
Subtotal, Technical Information Management .....	8,836	8,600	0	8,600	9,302
Adjustments.....	-250 <sup>a</sup>	0	0	0	0
Total, Technical Information Management .....	8,586	8,600	0	8,600	9,302

**Public Law Authorization:**

Public Law 95-91, "Department of Energy Organization Act"

Public Law 103-62, "Government Performance Results Act of 1993"

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<sup>a</sup> General reduction for use of prior year balances (reprogramming).

## Funding by Site

(dollars in thousands)

	FY 1999	FY 2000	FY 2001	\$ Change	% Change
Technical Information Management					
Oak Ridge, TN					
Office of Scientific and Technical Information..	8,836	8,600	9,302	+702	+8.2%
Subtotal, Technical Information Management .....	8,836	8,600	9,302	+702	+8.2%
Use of Prior Year Balances <sup>a</sup> .....	-250 <sup>a</sup>	0	0	0	0.0%
Subtotal, Technical Information Management .....	8,586	8,600	9,302	+702	+8.2%

## Site Description

The Office of Scientific and Technical Information is entirely located on a 7 acre site in Oak Ridge, Tennessee. The mission of the TIM program is to provide timely, accurate technical information to DOE researchers and the public by collecting, preserving, and disseminating scientific and technical information. This information is the primary deliverable from DOE's \$7 billion annual R&D expenditure as reported in technical reports and scientific journals.

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<sup>a</sup> General reduction for use of prior year balances (reprogramming).

# Program Support

## Mission Supporting Goals and Objectives

Scientific and technical information is the principal deliverable from research and development (R&D). Department of Energy researchers, whether with laboratories, universities or contractors, document their research results in two main ways: report literature and journal literature. The TIM program plays a central role in making both types of literature searchable and retrievable.

For report literature, TIM coordinates a Department-wide program involving researchers, librarians, and program managers, that results in reports being collected, preserved, and disseminated. The DOE Information Bridge, TIM's web product for reports, includes over 4 million pages in 50,000 reports, all searchable. The Government Printing Office has found this product sufficiently valuable that it has sponsored making this web site available to the public. For DOE-sponsored research in progress, TIM maintains the DOE R&D Tracking System, a Department-wide tracking system for R&D projects sponsored or performed by DOE. Its public counterpart, the R&D Project Summaries Database, provides open access to DOE R&D project information.

For DOE-sponsored R&D that is recorded in journal literature, TIM has developed and implemented PubSCIENCE through negotiations with journal publishers. PubSCIENCE provides searchable bibliographic records with hypertext linkages to full-text journal articles at publishers' web sites. Under the PubSCIENCE purview, the TIM program, in collaboration with DOE National Laboratories, continues to negotiate electronic subscription arrangements with journal publishers with the overall goal of delivering completely comprehensive full-text electronic science journals to the desktop.

TIM collects information from over 7,000 DOE research entities; serves DOE's research community of 30,000 scientists and engineers; manages a 50-year archive of 1.5 million unclassified and 100,000 classified documents; and fulfills U.S. obligations under two international information exchange agreements, resulting in 72,000 foreign R&D summaries being available to the U.S. research community each year, a collection that would not otherwise be available from any other source. This exchange agreement involves the International Nuclear Information System (INIS), under the aegis of the International Atomic Energy Agency and the United Nations and the International Energy Agency's Energy Technology Data Exchange (ETDE), under the aegis of the International Energy Agency and the Organization for Economic Competitiveness and Development.

## Funding Schedule

(dollars in thousands)

	FY 1999	FY 2000	FY 2001	\$ Change	% Change
Program Support .....	1,586	1,600	1,802	+202	+12.6%
Total, Program Support.....	1,586	1,600	1,802	+202	+12.6%

## Detailed Project Justification

(dollars in thousands)

	FY 1999	FY 2000	FY 2001
<b>Program Support</b>			
<ul style="list-style-type: none"> <li>■ Continue progress on “Bringing Science Information to the Desktop” activities, including keeping the Information Bridge current by adding 15,000-20,000 new full-text technical reports and digitizing deteriorating historic reports (currently in paper) dating from 1947; providing the DOE research community electronic access to core science journals through PubSCIENCE; and maintaining/enhancing the Virtual Library of Energy Science and Technology, Energy Files. Streamline collection, management, and dissemination of DOE R&amp;D results by continuing transition from predominately paper-based environment to electronic information exchange and locator technology. Capital equipment funding is included for computer hardware to support electronic information exchange efforts. ....</li> </ul>	950	1,200	1,000
<ul style="list-style-type: none"> <li>■ Update and maintain DOE’s R&amp;D Tracking System, the Department’s centrally managed database that tracks key information on each R&amp;D project sponsored or performed by DOE. ....</li> </ul>	0	0	202
<ul style="list-style-type: none"> <li>■ Provide access to 72,000 foreign R&amp;D records for domestic research and industrial communities.....</li> </ul>	236	200	250
<ul style="list-style-type: none"> <li>■ Enable simplified electronic exchange of and access to classified technical information by beginning the digitization of 100,000 current and historic reports. ....</li> </ul>	400	200	350
<b>Total, Program Support .....</b>	<b>1,586</b>	<b>1,600</b>	<b>1,802</b>

## Explanation of Funding Changes from FY 2000 to FY 2001

FY 2001 vs. FY 2000 (\$000)
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### Program Support

■ Decrease to the “Bringing Science Information to the Desktop” activities as the transition to electronic environment nears completion. ....	-200
■ Increase for support of the DOE R&D Tracking System.....	+202
■ Increase to the international information exchange activity to ensure continued receipt of 72,000 foreign research records on nuclear energy and safety. ....	+50
■ Increase to upgrade the classified information function to an electronic environment similar to the streamlined processing system for unclassified information. ....	+150
Total Funding Change, Program Support.....	+202

# Program Direction

## Mission Supporting Goals and Objectives

Program Direction funding provides staffing and resources to both direct and execute the Technical Information Management (TIM) mission. Federally-staffed functions include policy development and integration; U.S. and DOE representation in interagency and international information exchange agreements; and collecting, preserving, and disseminating information resulting from DOE's R&D investment, including re-engineering mission-critical systems to take full advantage of electronic information technology.

Program Direction is divided into the following categories:

- **Salaries and Benefits** provide for Federal staff involved in the functions described above.
- **Travel** provides for program-related travel to coordinate and implement partnerships within DOE and with other federal agencies to exchange electronic information and provide free access, via the Internet, to taxpayer-sponsored R&D results.
- **Support Services** provides on-site services in such areas as mail operations, local area network support, and analysis of electronic information exchange.
- **Other Related Expenses** represent maintenance and utilities costs for the Office of Scientific and Technical Information facility and equipment for office automation and work requirements.

## Funding Schedule

(dollars in thousands)

	FY 1999	FY 2000	FY 2001	\$ Change	% Change
<b>Oak Ridge, TN</b>					
Salaries and Benefits.....	6,320	6,220	6,610	+390	+6.3%
Travel .....	90	80	90	+10	+12.5%
Support Services .....	350	200	200	0	0.0%
Other Related Expenses .....	200	200	300	+100	+50.0%
Total, Oak Ridge, TN.....	6,960	6,700	7,200	+500	+7.5%
Full Time Equivalents.....	86	80	84	+4	+5.0%
<b>Headquarters</b>					
Salaries and Benefits.....	280	290	290	0	0.0%
Travel .....	10	10	10	0	0.0%
Support Services .....	0	0	0	0	0.0%
Other Related Expenses .....	0	0	0	0	0.0%
Total, Headquarters.....	290	300	300	0	0.0%
Full Time Equivalents.....	3	3	3	0	0.0%
<b>Total Technical Information Management</b>					
Salaries and Benefits.....	6,600	6,510	6,900	+390	+6.0%
Travel .....	100	90	100	+10	+11.1%
Support Services .....	350	200	200	0	0.0%
Other Related Expenses .....	200	200	300	+100	+50.0%
Total, Program Direction .....	7,250	7,000	7,500	+500	+7.1%
Full Time Equivalents.....	89	83	87	+4	+4.8%

## Detailed Program Justification

(dollars in thousands)

	FY 1999	FY 2000	FY 2001
<b>Salaries and Benefits</b>			
<ul style="list-style-type: none"> <li>■ In the Technical Information Management (TIM) program, federally-staffed functions include policy development and integration; U.S. and DOE representation in interagency and international information exchange agreements; and collecting, preserving, and disseminating information resulting from DOE's R&amp;D investment. More specifically, federal staff will implement programs and practices involving all National Laboratories and over 7,000 other DOE research entities producing scientific and technical information (STI). These programs will focus on technical reports that are received electronically and made available via the DOE Information Bridge. Federal staff will also conduct negotiations and programs with science journal publishers to provide the DOE research community access to electronic journals via PubSCIENCE. In addition to information systems, federal staff will also redesign electronic systems to enable the secure exchange of 100,000 classified documents.....</li> </ul>	6,600	6,510	6,900
<b>Travel</b>			
<ul style="list-style-type: none"> <li>■ Travel funding supports a nationwide program involving National Laboratories and thousands of research entities, including coordination of common exchange standards.....</li> </ul>	100	90	100
<b>Support Services</b>			
<ul style="list-style-type: none"> <li>■ FY 2001 is at the base level of support services needed primarily for internal and external automatic data processing functions.....</li> </ul>	350	200	200
<b>Other Related Expenses</b>			
<ul style="list-style-type: none"> <li>■ Expenses reflect facility maintenance costs and a transition to enhanced telecommunications for handling increased information dissemination.....</li> </ul>	200	200	300
<b>Total, Program Direction.....</b>	<b>7,250</b>	<b>7,000</b>	<b>7,500</b>

## Explanation of Funding Changes from FY 2000 to FY 2001

FY 2001 vs. FY 2000 (\$000)
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### Salaries and Benefits

- FY 2001 salary costs reflect an increase of 4 FTEs needed to restore critical information science and technology skills and also an increase for cost of living escalation. FY 2000 costs include buyouts for six employees and associated costs such as annual leave payments and a fifteen percent contribution to the Civil Service Retirement and Disability Fund. .... +390

### Travel

- Travel increase of \$10,000 reflects the minimum needed to maintain viable programmatic relations with information-producing R&D sites and to conduct successful negotiations with journal publishers to ensure continued Departmental access to electronic science journals ..... +10

### Other Related Expenses

- Increase is needed to provide adequate telecommunications capacity to accommodate increased usage of Internet-based systems and to make minor improvements to the TIM facility. .... +100

Total Funding Change, Program Direction.....	+500
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## Support Services

(dollars in thousands)

	FY 1999	FY 2000	FY 2001	\$ Change	% Change
Technical Support Services					
Test and Evaluation Studies .....	300	100	100	0	0.0%
Total, Technical Support Services.....	300	100	100	0	0.0%
Management Support Services					
ADP Support .....	50	100	100	0	0.0%
Total, Management Support Services .....	50	100	100	0	0.0%
Total, Support Services.....	350	200	200	0	0.0%

## Other Related Expenses

(dollars in thousands)

	FY 1999	FY 2000	FY 2001	\$ Change	% Change
Training.....	0	0	15	+15	+100.0%
Rental Spaces/Utilities .....	150	150	200	+50	+33.3%
Software Procurement/Maintenance Activities/Capital Acquisitions.....	50	50	85	+35	+70.0%
Total, Other Related Expenses.....	200	200	300	+100	+50.0%

# Capital Operating Expenses & Construction Summary

## Capital Operating Expenses

(dollars in thousands)

	FY 1999	FY 2000	FY 2001	\$ Change	% Change
Capital Equipment.....	140	200	200	0	0.0%
Total, Capital Operating Expenses .....	140	200	200	0	0.0%